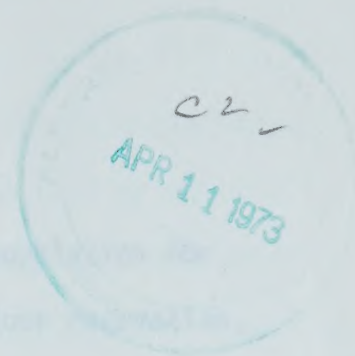


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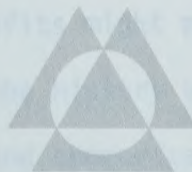


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PROSPECTUS: COOKING and HASTINGS LAKES PUBLIC HEARINGS

EDMONTON & SOUTH COOKING LAKE, ALBERTA
AUGUST 23, 25, 1971



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ENVIRONMENT CONSERVATION AUTHORITY

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SUMMARY:

The increasing need of Alberta's growing Urban population for access to the natural environment and for dispersed outdoor recreation, requires that these be provided as close as possible to the major population centers.

Because of its suitable location, high potential for development as a recreational, educational and demonstration area, and the unique history leading to its present condition, the Cooking Lake Moraine became the subject of an initial study. The study indicated that the area could be developed as a proto-type Conservation District for Alberta.

In the fall of 1970, public concern over the plight of the area was expressed in a petition to the Environment Conservation Authority. Bearing approximately 600 signatures, it called for action to restore the water levels and save the lakes.

As a result of this concern, the Environment Conservation Authority requested and in co-operation with the Provincial Government Conservation and Utilization Committee, employed private consultants to conduct an analysis of the feasibility of restoring the lake levels. The authors of this study indicate that the restoration of the levels of the lakes is technically feasible and that subsequent benefits might merit the costs.

This prospectus will briefly review the history and characteristics of the area, describe its present situation and summarize the consultants plan for its rehabilitation. It will also review the benefits and costs which can be expected, and the guidelines within which development could proceed.

The increasing need of Alberta's growing urban population for access to the natural environment and for dispersed outdoor recreation, requires that there be provided as close as possible to the major population centers,

Because of its suitable location, then selected for development as a recreational, educational and demonstration area, and the unique

history leading to its present condition, the existing Lake Minniston became the subject of an initial study. The study indicated that the area could be developed as a water-type Conservation District for Alberta.

In the early stages of the study, the water levels and lake levels were examined in a preliminary study by the Conservation Authority.

As a result of this work, the Environment Conservation Authority requested and in co-operation with the Provincial Government Conservation and Utilization Committee, employed private consultants to conduct an

analysis of the feasibility of restoring the lake levels. The subject of

this study indicates that the restoration of the levels of the lake is

technically feasible and that subsequent benefits might result from the work.

This prospectus will briefly review the history and characteristics

of the area, describe its present situation and summarize the consultants

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LOCATION:

Cooking and Hastings Lakes, along with the smaller Halfmoon Lake, are situated in the northern section of the Cooking Lake Moraine about 20 miles South East of Edmonton. They form the lower part of a larger watershed which also includes Lakes Miquelon, Joseph, Oliver, Ministik, McFaddin, Antler, Wanisan and Sisib.

The Moraine area consists of glacial deposits up to 80 feet deep in places, which slope down towards the Northeast. Thus the lakes to the South are at 2500 ft. above sea level, while Cooking and Hastings Lakes to the North are at just over 2400 ft.

The larger Beaverhill Lake about 10 miles to the East, lies outside the Moraine and is about 200 ft. lower. It provides a catchment area for the run-off from the Moraine and itself drains eventually into the North Saskatchewan River via Beaverhill Creek.

HISTORY:

The Cooking Lake Moraine was first settled in 1890, at which time it was covered by coniferous forest. Clearing of the forests commenced immediately and by 1900 the area had been subdivided and was in use for agriculture, forestry, and recreation.

In 1865 both Beaverhill Lake and the lakes in the Moraine were dry but heavy rains in 1875 restored the water levels. The 1880's were wet years and the lakes became full.

The arrival of the first settlers coincided with a series of dry years. Under almost continuous burning most of the spruce forest was destroyed by 1895 and once again the level of water in the lakes had fallen sharply.

The cycle was repeated by the advent of heavy rains in 1900 and 1901.

Subsequent tree growth was mainly deciduous types and generally the lakes remained in good condition with satisfactory water levels until the drought years of the 1930's.

Since then, the water levels have steadily declined and today they are 7 to 10 feet below their earlier natural levels.

It is significant that the heavy rains of 1900 and 1901 kept the lakes at close to top levels until after 1920, whereas a similar full condition in 1943 was depleted by 1950 and a subsequent 2 foot increase in water levels in 1965 is gone today.

It must be assumed that the watershed has lost much of its water storage capability and the most likely reason for this is the loss of its natural forest cover. It now seems likely that permanent satisfactory water levels will not again be restored to the Moraine by natural means alone.

The receding waterlines have had a marked effect on the area. Apart from the deterioration in the aesthetic quality of the shore and the decrease in water quality due to concentration of dissolved solids and other factors, both residential and commercial installations have suffered by the increasing separation from the waterline. On the other hand, in some areas land which has been exposed by the receding waters has been put to use as productive pastures.

It is obvious that while in general, the water areas have deteriorated, any action to restore it to a previous condition, must take into account a wide range of factors and interests, some of which will inevitably be completely opposing.

INVESTIGATION:

Following receipt of the petition from 598 concerned residents in

the fall of 1970 a study was commissioned to review:-

1. The present condition of the lakes.
2. The feasibility of improving the condition of the area and the best means of doing it.
3. The costs that would be incurred and the benefits to be expected.

The study revealed that it would not be possible to restore and maintain the levels in the Cooking/Hastings lake area by internal water management alone. It would, therefore, be necessary to bring in water from a source outside the Moraine area. The only practical source is the North Saskatchewan River, and to do this the water would have to be lifted 450 feet and transported 12 - 16 miles by pipeline to the lakes.

The consultant's report included a review of a second proposal for introducing water into the area as far south as Miquelon Lake. Such a scheme would have no benefit for the immediate Cooking/Hastings Lake area, and would involve a cost in excess of that for Cooking and Hastings Lakes alone. The southward diversion of water from the Saskatchewan River toward Miquelon Lake should be viewed independent of the proposal to restore water levels in Cooking and Hastings Lakes.

THE PLAN:

A possible plan for restoration of water levels would be centered on Cooking and Hastings Lakes, and could include Halfmoon Lake.

A water intake, pumping station and sedimentation basin would be located on the North Saskatchewan River, upstream of the City of Edmonton sewage treatment plant. A pipeline would lead from the pumping station southeast, to pass close to Halfmoon Lake (where a branch line could deliver water to Halfmoon Lake), and would terminate on the western end of

Cooking Lake. A booster pumping station would be required near the intersection of the pipeline with Highway 14X.

Water would be pumped from the North Saskatchewan River at a rate sufficient to return the lakes to normal levels in three years, and thereafter for a further two years to improve water quality for recreational use. Thereafter, pumping could be reduced to a rate sufficient to maintain both level and quality permanently.

BENEFIT/COST COMPARISON:

The capital cost of the above proposal will be as follows:

Intake Structure	\$ 80,000
Sedimentation Basin and Shrub clearance	50,000
Pumps and Motors	144,000
16 Miles of 30" Pipeline	2,240,000
Booster Station Structure	20,000
33' Right of Way for 16 Miles	100,000
	<hr/>
	\$2,634,000
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Operating costs based on pumping 30 cubic feet per second of water for five years and 15 cubic feet per second thereafter up to a total of 30 years would be as follows:

Energy Costs	0 - 5 years	\$ 237,000 per year
	6 - 30 years	106,000 per year
Administration and Routine Maintenance.	30 years at	30,000 per year

Benefits will accrue as follows:

1. Capital and Short Term Benefits. 0 - 5 years

Capital Appreciation

Commercial	Total: \$ 50,000
Cottage and Residential	Total: 538,000
Recreational	Total Net Value: <u>1,447,700</u>
	<u>\$2,035,700</u>

2. Continuing Benefits. 6 - 30 years

Recreational	Net Value: \$ 510,900 per year
Wildfowl Propagation	14,000 per year

PRESENT VALUE COST/BENEFIT COMPARISON:

When taken on the basis of a discount rate of 10% over the 30 year period, the present value of the direct costs of the scheme would be \$4,408,680. On the same basis the present value of the estimated direct benefits amounts to \$4,426,200.

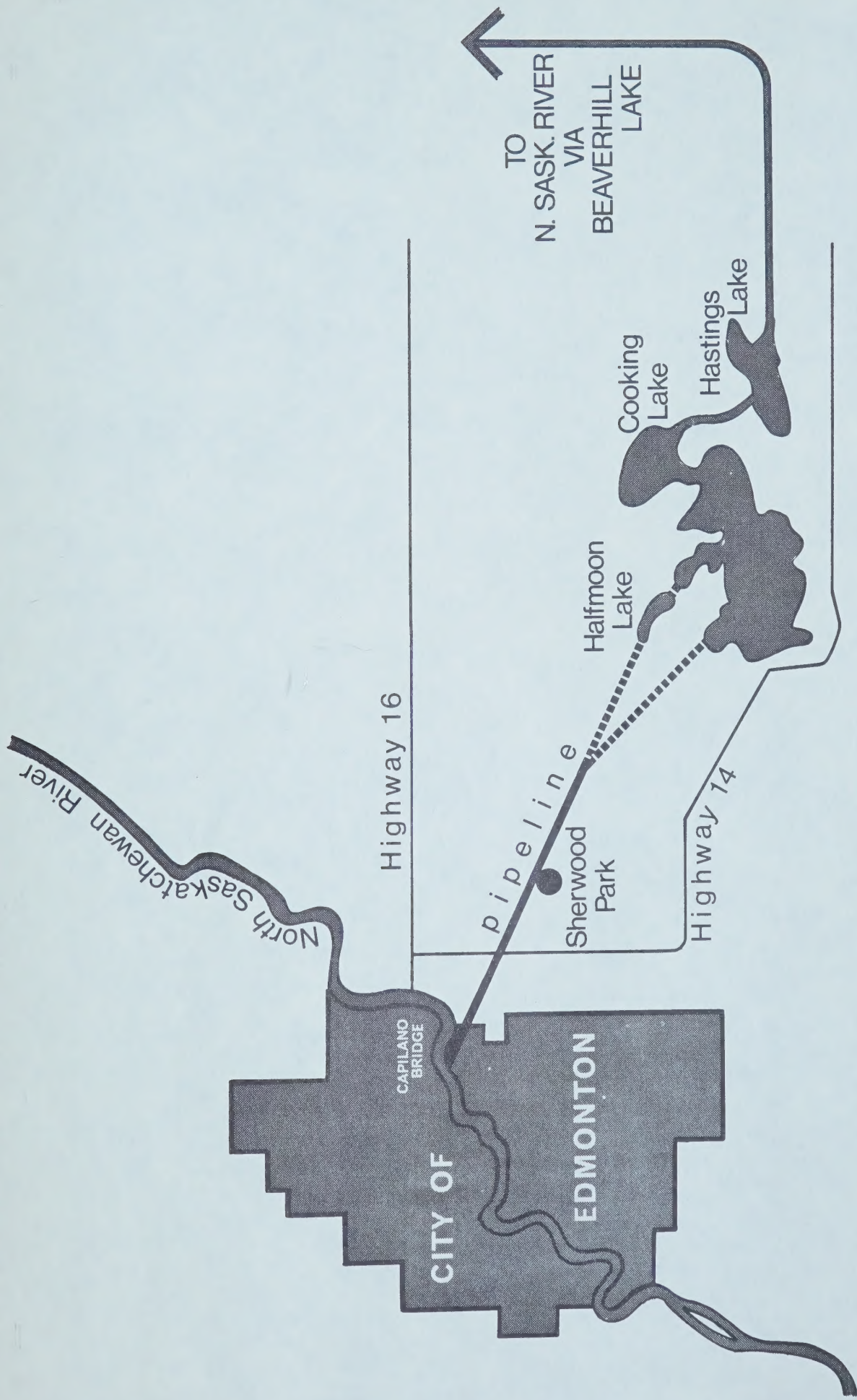
ADDITIONAL CONSIDERATIONS:

The proposal to restore water levels in Cooking and Hastings Lakes requires careful analysis as to the method of financing capital works and annual pumping and maintenance costs. Both commercial and residential users of the lakes would benefit directly from restoration of water levels, as would residents of the City of Edmonton and the smaller population centers in the area. Methods might be explored which would allow equitable sharing of both costs and benefits by the users and of costs by the several levels of government.

If the costs of restoring Cooking and Hastings Lakes were met from

public money, the benefits should be available to the various segments of the public involved. In that regard, consideration might have to be given to land use regulations, possible zoning restrictions and acquisition of public land by the Crown in order to ensure adequate public access.

Presentations at the Hearings will help to determine the scope and nature of recommendations made to the Government of Alberta by the Environment Conservation Authority.



ENVIRONMENT CONSERVATION AUTHORITY

